

### **REMARKS**

Reconsideration of the application in light of the above amendments and the following remarks is respectfully requested.

#### **Status of the Claims**

Claims 12-22 are pending. Claims 1-11 were previously canceled without prejudice or disclaimer of the subject matter recited therein. Claims 12 and 22 have been amended. No new matter has been added.

The Office Action Summary indicates that there is an objection to claims 15-21. However, the Detailed Action does not identify any objection for claims 15-21. Additionally, the Office Action Summary indicates that claims 12-14 and 22 are rejected. But claims 15, 18 and 19 were also indicated as rejected under 35 U.S.C. § 103(a) in the Detailed Action, item 6, page 4.

Accordingly, Applicants have proceeded on the basis that claims 12-15, 18, 19 and 22 stand rejected under 35 U.S.C. § 103(a), and that claims 16-17 and 20-21 have not been examined on their merits. Therefore, it is respectfully submitted that any subsequent Office Action rejecting claims 16-17 and 20-21 could not be properly deemed to be a final Office Action.

#### **Claim Objections**

Claim 22 was objected to for containing informalities. *See* Detailed Action, page 2. The Office Action cites MPEP § 2113 [R1], which discusses the patentability standards for product-by-process claims. Detailed Action, pages 2-3. The Office Action states "since the resulting

product appears to be the same the instant claims are anticipated by and/or rendered obvious by the references.” *Id.*, page 3.

Applicants respectfully submit that the Office Action does specify what informalities are contained within claim 22. However, Applicants have amended claim 22 to better set forth that the “residual light absorption rate is less than  $0.4 \text{ mm}^{-1}$  for light wavelengths in the range of about 500 nm to 1100 nm.” Support for this amendment can be found in the Specification at, for example, ¶ 0032 and Figure 3.

Reconsideration of the objection to claim 22 as containing informalities is respectfully requested.

**Rejection under 35 U.S.C. § 112**

Claims 22 was rejected under 35 U.S.C. § 112, second paragraph for failing to particularly point out the subject matter of the claimed invention. Specifically, the Office Action notes that “the reference of Dhar encompasses the product of claim 22 which is extremely broad and vague.” Applicants respectfully traverse this rejection.

The Office action does not provide any specificity as to how claim 22 fails to conform to the requirements of 35 U.S.C. § 112, second paragraph. Amended claim 22 is directed to an optical component having a residual light absorption rate of less than  $0.4 \text{ mm}^{-1}$ , which is produced according to the process of claim 12.

Reconsideration and withdrawal of the rejection of claim 22 under 35 U.S.C. § 112, second paragraph is respectfully requested.

**Rejection under 35 U.S.C. § 103**

Claims 12-15, 18, 19 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the non-patent literature "Optical Properties of Reduced Lithium Niobate Single Crystals," of Dhar et al., Journal of Applied Physics 68 (1990) December, No. 11 ("Dhar"). Applicants respectfully traverse this rejection.

Dhar describes a study conducted on the optical properties of  $\text{LiNbO}_3$  single crystals, where the study samples were unreduced and reduced samples. Dhar, section I, page 5804. To obtain reduced samples, crystals were annealed at  $1000^\circ\text{C}$  for 10 hours in a vacuum of  $10^{-3}$  Torr. The color of the samples went from transparent in the unreduced state to dark brown in the highly reduced samples. Dhar, section II, right hand column, page 5804. Dhar describes that transmission data for unreduced samples have a peak transmission of about 70% at a wavelength of 900 nm. Reduced samples have transmission percentages that increase in proportion to their degree of reduction. Dhar, section III, left hand column; Fig. 5, page 5805.

Amended independent claim 12 of the present application is directed to treating a crystal by an oxidation process and now recites "removing, during the oxidation process, the liberated electrons from the crystal using an external current source so as to reduce an optical absorption value of the crystal." Support for this amendment can be found in the Specification at, for example, ¶ 0033. It is respectfully submitted that Dhar fails to disclose, or suggest, removing liberated electrons during an oxidation process by using an external current source, as recited in independent claim 12. In contrast, Dhar merely describes an oxidation process where crystals are annealed at  $1000^\circ\text{C}$  in a vacuum. Dhar, section II, right hand column, page 5804. Indeed,

Dhar discloses that the colors of the crystals so treated went from transparent in the unreduced state to dark brown in the highly reduced samples. Dhar, section II, right hand column, page 5804. Therefore, Dhar could not disclose, or suggest, each and every feature of independent claim 12. Therefore, Dhar can not render independent claim 12, nor any of its dependent claims, obvious.

Reconsideration and withdrawal of the rejection of claims 12-15, 18, 19 and 22 under 35 U.S.C. § 103(a) in view of the non-patent literature "Optical Properties of Reduced Lithium Niobate Single Crystals," of Dhar et al. is respectfully requested.

**CONCLUSION**

In view of the foregoing it is believed that claims 12-22 are in condition for allowance and it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining which the Examiner believes could be resolved through a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

No fees are believed to be due with the filing of this response. In the event of a fee discrepancy, please charge any fees due in connection with this filing to Deposit Account No. 04-0100 referencing Docket No. 20811/0204481-US0.

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Respectfully submitted

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